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XXXIV.—*On Thysanoptera from the Seychelles Islands and Rodrigues.* By RICHARD S. BAGNALL, F.R.S.E., F.L.S.

[Plates IV.-VII.]

THE Thysanopterous fauna of Madagascar, the Mascarene and the Seychelles Islands is virtually a new field of enquiry. In 1910 Trybom described *Liothrips tarsidens*, *Liothrips* sp., and *Megalothrips macropteryx* from Madagascar, and three years later the present writer diagnosed *Physothrips variabilis* from the Comoro Islands.

This memoir is based chiefly upon the collections made by the Percy Sladen Trust Expedition to the Indian Ocean under Professor Stanley Gardiner, F.R.S., in 1908-9, many results of which have been published in a series of special volumes (Trans. Linn. Soc. Lond. ser. 2, Zool. vols. xii.-xvii.). The Thysanoptera were collected by Dr. Hugh Scott in the mountainous granitic islands of Mahé and Silhouette in the Seychelles group. Almost all the species were obtained at considerable elevations in the highly peculiar endemic forests. The only exceptions appear to be *Haplothrips mahensis* (all the examples of which were taken among imported vegetation at coast-level) and *Gynaikothrips scotti*, specimens of which were found not only at high elevations in the native forest, but also on Long Island, a coconut-planted

islet (containing very little indigenous vegetation) off the coast of Mahé.

A first set, including types of all new forms, will be placed in the British Museum of Natural History.

The Seychelles Islands.

The following is a list of the species described from the Seychelles Islands: Mahé (M) and Silhouette (S):—

TEREBRANTIA.

- | | |
|---|---------------------------------------|
| 1. <i>Trypactothrips brevisetis</i> , sp. n. | 3. <i>Limothrips cerealium</i> , Hal. |
| n. M. | M. S. |
| 2. <i>Brachyurothrips anomalus</i> , gen. et sp. n. | 4. <i>Thrips</i> sp. |
| M. | S. |

TUBULIFERA.

- | | |
|--|--|
| 5. <i>Haplothrips mahensis</i> , sp. n. | 14. <i>Adiaphorothrips brevis</i> , sp. n. |
| M. | M. |
| 6. — <i>silhouettensis</i> , sp. n. | 15. <i>Eurynothrips denticollis</i> , Bagn. |
| S. | M. |
| 7. <i>Acallurothrips proturus</i> , sp. n. | 16. <i>Liothrips nigricornis</i> , sp. n. |
| S. | S. |
| 8. — <i>macrurus</i> , gen. et sp. n. | 17. — <i>intrepidus</i> , sp. n. |
| M. | S. |
| 9. <i>Cæurothrips brevicollis</i> , gen. et sp. n. | 18. — sp. (? <i>micrurus</i> , Bagn.). |
| M. | M. |
| 10. — <i>validus</i> , sp. n. | 19. <i>Dicaiothrips seychellensis</i> , sp. n. |
| S. | M., S. |
| 11. <i>Gynaikothrips scotti</i> , sp. n. | 20. — <i>rex</i> , sp. n. |
| M., S. | S. |
| 12. <i>Cryptothrips seychellensis</i> , sp. n. | 21. — <i>mahensis</i> , sp. n. |
| M. | M. |
| 13. — <i>difficilis</i> , sp. n. | 22. — <i>hystrix</i> , sp. n. |
| S. | M., S. |

Of the twenty-two species (representing thirteen genera) enumerated above, two—*Thrips* sp., ♂, and *Liothrips* sp. (? *micrurus*, Bagn.)—are represented by single examples in too poor a condition to identify with certainty or to describe. Of the twenty remaining, thirteen are found in Mahé, the largest island of the group, but two of these were previously known; whilst ten hail from Silhouette. It will be noticed that only three species are common to the two islands, but it should be pointed out that there are several instances of two allied species of a genus being peculiar, the one to Mahé and the other to Silhouette, and, though closely allied, I feel confident from the material before me that these forms in most, if not in all, such cases, will be confirmed as specifically distinct when more and better material is available. Four new genera and eighteen new species are characterized, but, of the new genera, *Trypactothrips* is diagnosed with

Dinurothrips rutherfordi, Bagn. (a previously known species), as the type of the genus.

Of the two known species from Mahé, *Limothrips cerealium*, Hal., is a cosmopolitan form which usually affects cereals, and is known throughout the Temperate regions, and of which I have records from North Africa, Australia, and South America; and *Eurynothrips denticollis*, Bagn., was originally described from Queensland, and until now not found elsewhere.

It is evident that the smaller species comprising the Terebrantia have not been specially collected. They are for the most part to be found in flowers and affecting grasses, the leaves of trees, etc., and it is probably in this particular section of the order that many peculiar forms will be found affecting the large proportion of plants not found outside the islands.

Geographical Affinities.

As the study is a young one and our knowledge of the African and Indo-Malayan species as yet very imperfect, it is difficult to generalize. It may be said, however, that, as in so many other groups, a *large* proportion of the fauna is peculiar, and that, especially in regard to new or little-known genera, the affinities seem to be overwhelmingly Oriental or Indo-Malayan.

Three species of *Trypactothrips* are now known—*rutherfordi* (Bagn.), from Ceylon, *roboris*, Bagn., from West Africa, and *brevisetis*, described herein; the genus comes nearest to *Dinurothrips*, wherein we know three species from Australia, West Indies, and South America respectively. They are of "Heliothripid" affinities, a group wherein a large proportion of species affect crops such as cacao, indigo, or plants grown for ornamental purposes.

If *Brachyurothrips* has relationship with any described form, it is with the peculiar Indian genus *Panchatothrips*, Bagn.

Two species of *Adiaphorothrips* are now known from Borneo, whilst *Gynaiokothrips* is very strongly represented in the Malay Archipelago.

Acallurothrips and *Cænurothrips* are allied genera, and I have in my possession another species of *Cænurothrips* from Ceylon, which I am describing elsewhere.

As to the other species, it is difficult to draw conclusions. *Dicaiothrips* is a genus of wide distribution, but chiefly outside the temperate regions, and more strongly represented

in Indo-Malaya than in Africa. *Haplothrips* is almost world-wide in its range, and *Cryptothrips* also, and, whilst *Liothrips* is also represented in many parts of the globe, the species from the Seychelles depart from the usual type and come closest to the species described from Ceylon by Schmutz under the name *Ischyrothrips niger*, and which he classed with other species obviously belonging to other genera.

Rodrigues Island.

In the many vicissitudes and delays experienced in working out Dr. Scott's material a further small collection came to hand from one of the Mascarene Islands, Rodrigues, and I have had an opportunity of including this material in an Addendum (p. 286).

The collection was made in the island of Rodrigues between August and November (inclusive) of 1918 by Messrs. H. P. Thomasset and H. J. Snell, and was submitted to me through the kindness of Dr. Scott.

Rodrigues, about 11 miles by 5, is the smallest of the Mascarene Islands and very isolated, being about 350 miles E. by N. of Mauritius, and, of course, a very long way from the Seychelles, from which it also differs entirely in formation, being volcanic, whereas the Seychelles Islands are purely granitic. Rodrigues is mountainous, rising to elevations of 1100 to 1300 feet. The grand tropical forests which once covered the island have been almost entirely destroyed by fire, goats, pigs, and direct human action. Though there are still 297 indigenous Phanerogams and 175 indigenous Cryptogams (probably only about half the original native flora), and though in ravines many fine old native trees have escaped destruction, yet the island is comparatively dry, and there are no areas of dense, moist, native forest such as those which still remain in the Seychelles (see H. J. Snell and W. H. T. Tams, "The Natural History of the Island of Rodrigues," Proc. Camb. Phil. Soc. xix. pp. 283-292, 1920).

The following is a list of species recorded and described from Rodrigues Island herein :—

TEREBRANTIA.

1. *Trypactothrips brevisetis*, Bagn.

TUBULIFERA.

- | | | |
|---|--|-------------------------------|
| 2. <i>Cœnurothrips minor</i> , sp. n. | | 4. <i>Ecacanthothrips</i> sp. |
| 3. <i>Liothrips thomasseti</i> , sp. n. | | |

The first is apparently the same as the Mahé species, the second and third have Seychelles affinities, whilst the fourth very strongly confirms and emphasizes the Indo-Malayau affinities of the fauna.

Before proceeding with the technical account, I will briefly outline certain observations of general interest:—

Viviparity.

In mounting the dried specimens of *Idolothripidæ* Mr. H. Britten drew my attention to the fact that two minute larval young (obviously of the first instar) floated from a female of *Dicaiothrips seychellensis*, m. (Mahé, no. 65). This is the first instance of the kind with which I have met.

I have already published Mr. Urich's communication on an allied species (*D. brevicornis*, Bagn.), in which he notes having observed females deposit eggs on the leaves of a dead coconut-palm and sit on them*.

Teratology.

Examples of thrips with one or other of the antennæ malformed are by no means rare, and such malformation is illustrated in an example of *Dicaiothrips hystrix*, m. (Silhouette, no. 25); it usually takes the form of a fusion of segments, generally the more distal ones. A rarer teratological condition is shown in the ♂ type-specimen of the same species (*D. hystrix*), where the left outer postero-marginal pronotal bristle is duplicated, the second being of about equal size and situated close to the normal seta.

An Entomophagous Fungus.

In the upper part of the abdomen of an example of *D. hystrix*, m. (Silhouette, no. 25), I detected several hundreds of a minute organism indiscriminately disposed, and each of a fusiform shape comprising three segments. I was at first inclined to think that this was a protozoon.

They proved to be fungus spores, however, and at the

* Bagnall, R. S., "On a Collection of Thysanoptera from the West Indies, with Description of new Genera and Species," Journ. Linn. Soc. Zool. xxxii. pp. 495-507, pls. xlviii. & xlix.

suggestion of my friend Prof. J. H. Ashworth, F.R.S., I sent the preparation to Mr. W. B. Brierly, M.Sc., of the Rothamstead Experimental Station, Harpenden, who kindly reported as follows:—

“The fungus spores on the *Dicaiothrips* belong to the genus *Fusarium*, which contains many common saprophytes of decaying organic matter. Owing to the absence of mycelium, characteristic growth, etc., it is impossible to identify it specifically with any degree of certainty, but it is not improbably *Fusarium speiseri*, Lindan, a species which Hiedick has recorded on dead Cicadas from Western Prussia.”

In conclusion, I would express my warm appreciation of the help and consideration accorded me by my friend Dr. H. Scott, and I only regret that the demands of a very busy life have made it impossible for me to give his collections the close and sustained study that they justify.

Classification of the Order Thysanoptera.

It is only in recent years that the Thysanoptera have received any serious attention, and, though satisfactory strides have been made in the past decade, we can as yet consider that we are only on the fringe of the subject. As further advances are made and new factors met with, old material requires constant re-examination in the light of such new knowledge. The most complete outline of the classification is that published by Hood (Proc. Biol. Soc. Washington, 1915, xxviii. pp. 53-60), in which previous groups are tentatively accepted, but new names proposed according to modern usages, the main divisions designated as superfamilies in place of the previously named tribes. It will be seen that the original main groups of Haliday (the *Æolothripoidæ*, *Thripoidæ*, and *Phlæothripoidæ* of this paper) remain true to this day, and are only extended by the discovery of the *Urothripoidæ*.

The known Thysanoptera are divided into two suborders, each embracing two main groups or superfamilies, which may be set out in tabular form as follows:—

1. Female with saw-like ovipositor formed of two pairs of gonapophyses arising from abdominal segments 8 and 9;

terminal abdominal segments seldom tubular, bluntly rounded in the male, and in the female longitudinally divided beneath and usually conical. Wings microscopically pubescent; forewing with marginal vein and at least one longitudinal vein attaining tip. . . .

Suborder *Terebrantia*.

A. Ovipositor curved upwards. Wings broad and rounded at tip. Body not depressed. Antennæ nine-segmented, the apical joints never styliform. . . .

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Superfamily *ÆOLOTHRIP-*

B. Ovipositor curved downwards. Wings narrower, almost invariably pointed at tip. Body more or less depressed. Antennæ (except in Heterothripidæ, where the antennal sensoria are also of a distinctive type) 6- to 8-segmented, with apical joint or joints usually styliform

Superfamily *THRIPIDEA* †.

2. Female without ovipositor; terminal abdominal segments almost invariably tubular, approximately the same in both sexes. Wings not pubescent; forewing with at most a single abbreviated median vein

Suborder *Tubulifera*.

C. Maxillary palpi 2-segmented. Antennæ 8- (rarely 7-) segmented. Intermediate coxæ more widely separated than fore or hind pairs †. Ninth abdominal segment not or rarely longer than 8; terminal hairs rarely much longer than tube

[OIDEA §.

Superfamily *PHLÆOTHRIP-*

D. Maxillary palpi 1-segmented. Antennæ 4- to 7-segmented. Hind coxæ more widely separated than fore or intermediate pairs. Ninth abdominal segment longer than 8; terminal hairs very much longer than tube

Superfamily *UROTHRIP-*
[OIDEA || (=suborder *Polystigmata*, Bagn.).

* Containing the family *Æolothripidæ*, comprised of three strongly characterized subfamilies—*Orothripinæ*, *Melanothripinæ*, and *Æolothripinæ*.

† Containing the families *Heterothripidæ*, *Thripidæ*, *Ceratothripidæ*, *Merothripidæ*, and *Panchæothripidæ*.

‡ This character is constant throughout the whole of the *Thysanoptera*, breaking down only when we get to *Urothrips*, Bagn., and allies (*Urothripodea*). It hence became an important character in my diagnosis of the suborder *Polystigmata* (= *Urothripodea*).

§ Containing the families *Phlæothripidæ*, *Ecacanthothripidæ*, *Pygothripidæ* (in my opinion of doubtful standing), *Hystriothripidæ*, *Megathripidæ*, and *Idolothripidæ*.

|| Containing the family *Urothripidæ* only.

Suborder TEREBRANTIA.

Family Thripidæ, s. l.

Genus TRYPHACTOTHRIPS*, NOV.

Belonging to the Heliothripid group and coming nearest *Dinurothrips*, Hood. Head transverse, cheeks converging posteriorly; anteriorly between eyes and also cheeks with frill-like explanate margins. Prothorax transverse, without long bristles and with the lateral margins broadly explanate, especially anteriorly. Fore-wings stouter than in *Dinurothrips*, spines on costa and veins moderately long and stout. Apical abdominal segments somewhat produced, though not to the same extent as in *Dinurothrips*.

Chiefly recognised by the peculiar and striking shelf-like explanate margins of head.

Type. *Dinurothrips rutherfordi*, Bagn.†.

1. *Tryphactothrips brevisetis*, sp. n.
(Pl. IV. fig. 2 b (also note figs. 1-2 a).)

There is a single example of this curious genus in Dr. Scott's collection, but unfortunately the shelf-like explanations of the head and thorax are mutilated and the wings, laid down the back, are difficult to see. This species comes very near to *T. rutherfordi* (Bagn.), a species found on leaves of *Allamanda* in Ceylon and is of the same size and form. The fore-wing appears to be medianly brown with a diffused ill-defined band across the third eighth and another before apex; the extreme tip of the wing appears to be noticeably lighter than the median portion. The bristles are differently disposed, entirely brown, and only 0·5 to 0·6 the length of those in *T. rutherfordi*. The bristles of the lower vein are disposed as follows:—2+3 (or 2)+1+1, which in the figured wing of *rutherfordi* are 2+1+1+3+1. In *T. rutherfordi* these bristles are at least 1·3 times as long as the median breadth of the wing, in *brevisetis* about 0·7 the breadth.

It is hoped more material may be forthcoming.

* I am indebted to my friend, the Rev. W. M. Teape, for suggesting this generic name, the affix of which is derived from a rare word found in an inscription on the stone fence round Herod's temple, meaning a fence or balustrade (♀ lattice).—R. S. B.

† A table of species is given in Ann. & Mag. Nat. Hist. ser. 9, vol. iv. p. 255 (1919).

Loc. SEYCHELLES. Mahé: Cascade, 800–1500 feet, 1909,
1 ♀.

Genus BRACHYUROTHRIPS, nov.

Near *Panchatothrips*, Bagnall. Head short and transverse, without thickened collar. Eyes prominent, protruding. Antennæ Mouth-cone reaching across prosternum, maxillary palpi Prothorax strongly transverse, without prominent bristles.

Pterothorax large. Wings long, rather pointed, both pairs minutely setose: costal spines on fore-wing exceptionally long; veins obsolete, with a few setæ on a line corresponding to the fore-vein near to costa.

Abdomen broadly ovate as in *Panchatothrips*; pleurites overlapping. The ninth segment cylindrical, longer than broad; tenth very short, broader than long; ventral opening rather close; abdominal bristles long. Ovipositor apparently normal.

Type. *Brachyurothrips anomalus*, mihi.

Whilst apparently related to *Panchatothrips* in its general form, the overlapping abdominal pleurites, etc., in the puzzling nature of its ninth and tenth abdominal segments, *Brachyurothrips* is unlike anything described. I at first tried to reconcile the segment described as the ninth with the tenth, regarding the ultimate as a highly developed type of the vestigial eleventh segment, but without success. Therefore *Brachyurothrips* is chiefly peculiar in the enlarged ninth and the short weak tenth abdominal segment.

Unfortunately there is only one poorly preserved example at my disposal.

2. *Brachyurothrips anomalus*, sp. n.

(Pl. IV. figs. 3–5.)

♀.—Length 1·15 mm., breadth of mesothorax 0·29 mm.

Colour yellowish-brown to brown, abdomen wholly dark; head yellow near inner margin of eyes, basally shaded to brown, cheeks brown; prothorax wholly and most of pterothorax dark grey-brown, fore-legs yellow, basal half of hind femora shaded with greyish brown; basal joints of antennæ (at least) yellow tinged with grey.

Head about 1·5 times as broad across eyes as long; transversely striated in basal half. Widest across eyes; cheeks roundly converging to base; basal antennal joints widely

separated. Eyes coarsely faceted, not pilose, prominent; ocelli large, situated on a raised prominence remote from eyes, with a pair of interocellar setæ. Antennæ Mouth-cone bluntly rounded at apex; maxillary palpi

Prothorax strongly transverse, only about 0·7 the length of the head and without prominent setæ. Pterothorax large, broader than long. Fore-legs long, other legs Wings long, reaching beyond tip of abdomen, surface of both pairs minutely and closely setose. Fore-wing brown, eleven to twelve times as long as broad through middle; costa with 19-20 long bristles, the longest being about three times the breadth of the wing; veins obsolete, a series of five or six spines on line of upper vein rather close to costa; lower cilia wavy. Hind-wing lightish grey-brown, mid-vein brown; cilia of upper margin few and widely spaced, lower cilia, as in fore-wing, wavy.

Abdomen broadly ovate, 1·5 times as long as broad, broader than the pterothorax; pleurites of segments 2-8 prominent, overlapping; 9 drawn into 8, cylindrical, altogether 1·8 as long as broad distally; 10 short, broader than long with the terminal hairs short and weak. Lateral abdominal bristles long, especially those on segments 8 and 9.

On account of the opacity of the single specimen, the description of the abdomen is incomplete and possibly at fault. It is to be hoped that more material of this curious insect may shortly be forthcoming.

Loc. SEYCHELLES. Mahé: Cascade Estate, about 1000 feet, ii.-iii. 1909, 1 ♀.

Genus LIMOTHrips, Hal.

3. *Limothrips cerealium*, Hal.

This species is widely known as a pest to cereal crops and is of wide distribution.

Loc. SEYCHELLES. Mahé: 24. x. 1908, from the high forest of Morne Blanc, 1 ♀.

Genus THRIPS, L.

4. *Thrips* sp.

♂. There is one moderately preserved example of this

genus, yellowish, and only 0·7 mm. long. I have retained the preparation for future study.

Loc. SEYCHELLES. Silhouette: forest above Mare aux Cochons, over 1000 feet, 2. ix. 1908, 1 ♂.

Suborder TUBULIFERA.

Family Phlœothripidæ.

Genus HAPLOTHRIPS, SERV.

5. *Haplothrips mahensis*, sp. n.
(Pl. VI. figs. 12, 13.)

♀.—Length approximately 1·5 mm.

Colour dark grey-brown; fore-tibiæ and fore-tarsi yellowish. Intermediate antennal joints 3–6 yellow, 6 lightly touched with grey-brown, and 4 and 5 with grey; 7 and 8 grey-brown. Wings clear except for scale and small basal patch of fore-wing light grey-brown.

Head only as long as broad, cheeks very faintly arcuate, furnished with a few minute setæ. Eyes finely faceted, occupying about 0·4 the dorsal length of the head; space between them equal to, or a little more than, the breadth of one of them. Postocular bristles apparently about the length of eye, dilated at apex. Antenna very similar to *H. karnyi*, Bagn., of usual type; segment 4 broader than 3 and 3 broader than 5 or 6, these latter joints being roughly ovate.

Pronotum 0·7 the length of the head and 1·8 times as broad as long; all setæ present, long, dilated at apex; the mid-lateral pair and those at anterior angles as long as the postocular pair; the postero-marginal pairs are presumably appreciably longer, but cannot be seen in the available material, excepting in one example where one of the outer pair is present, projected at an angle and apparently about 0·6 the median length of the pronotum. Legs normal, fore-femora incrassate and fore-tarsus armed with a minute tooth in addition to the retractile claw of the second segment. Wings normal, 6–8 duplicated cilia (6 and 8 in one and 7 and 8 in another specimen).

Abdomen elongate, as broad as the pterothorax, roundly narrowed from base of segment 8 to base of tube. Tube short and stout, about 0·6 the length of the head and not quite 0·6 as broad at base as long; evenly narrowed to apex,

where it is about one-half as broad as at base. Terminal hairs longer than the tube, very slender and colourless distally. Abdominal setæ long, slender, and light-coloured, those on 7 and 9 not quite as long as the tube.

In the three available specimens it is impossible to secure the correct relative lengths of the antennal joints and also of the head and pronotal chætæ.

The species is chiefly remarkable for its short head, which is no longer than broad. In addition to this salient characteristic it differs from *H. brevicollis*, Bagn. (E. Africa), by its less transverse prothorax, the shorter and stouter tube, and the stronger chætotaxy of head and pronotum.

Loc. SEYCHELLES. Mahé: Cascade, marshy ground near sea-level, 1 ♀, 20. ii. 1909, and 2 ♀ from marshes on coastal plain at Anse aux Pins and Anse Royale, 19-20. i. 1909. Also Long Island.

6. *Haplothrips silhouettensis*, sp. n.
(Pl. VI. fig. 11.)

The antennæ are absent in each of the eight preparations before me, but fragments were present in one or two of the specimens before they were transferred from cards to microscope-slides, and, as I then grouped both this and the preceding as one species, I infer that the antennæ had the intermediate segments yellow.

♀.—Length approximately 1·7 mm.

Colour dark grey-brown; fore-tibiæ and all tarsi yellowish, more or less shaded with grey to brown; wings clear or with at most the faintest suspicion of a grey tinge.

Head about 1·2 times as long as broad with eyes occupying about 0·4 the dorsal length; ocelli large, placed above a line drawn across the centre of eyes and the posterior pair contiguous to their inner margins; anterior ocellus directed forwards, overhanging; cheeks practically subparallel.

Pronotum about 0·75 the length of the head; setæ present, long, stout and distally dilated as in *mahensis* (the same remarks as I have already made for the preceding species, as regards the cephalic and pronotal chætotaxy, apply to *silhouettensis*; the chætotaxy is more or less destroyed in all of the specimens and in none of them are the postocular setæ or the terminal hairs of the tube preserved). Fore-tarsus with a minute tooth as in *mahensis*. Fore-wings with seven or eight duplicated cilia.

Abdomen as in *mahensis*; tube about 0·55 as long as the

head, 1·9 times as long as broad at base, where it is 1·75 times as broad as at apex. Abdominal setæ as in *mahensis*.

♂.—Smaller and more slender; fore-femora more strongly incrassate; abdominal chætotaxy stronger and modified as is usual in the ♂; segment 9 with a spine-like seta near each posterior angle.

Differs from *mahensis* in its larger size, the length of the head, and from both *karnyi*, Bagn. (East Africa), and *brevicollis*, Bagn., in the shorter tube. In *karnyi* the cephalic and pronotal setæ are very long and somewhat slender, whilst the head is comparatively narrower (12 : 14) than in *silhouetensis*.

Loc. SEYCHELLES. Silhouette: Mare aux Cochons plateau, September 1908, 5 ♀ and 3 ♂.

GENUS ACALLUROTHRIPS, NOV.

Size small, belonging to the *Cryptothrips* group, wherein the wings are more or less parallel-sided and never constricted near middle as in the *Haplothrips* group. Head as long, or scarcely as long, as broad, and not noticeably longer than the prothorax; mouth-cone massive, reaching beyond posternum. Antennæ about twice as long as the head, intermediate joints short, 7 and 8 connate. Tube curiously unformed, basal half more or less longitudinally ribbed, and extreme apex very sharply constricted; terminal hairs weak.

Wings simple, without duplicated cilia in the fore-wing.

Type. *Acallurothrips macrurus*, mihi.

7. *Acallurothrips proturus*, sp. n. (Pl. V. figs. 3, 4.)

Length 1·35 mm., breadth of pterothorax 0·27 mm.

Blackish-brown, shining; legs dark chestnut-brown, fore-tibiæ shaded to yellow and all tarsi yellowish. Wings brownish-yellow with cilia smoky-brown.

Head with cheeks subparallel, practically as long as broad; eyes moderately finely faceted, occupying about 0·35 the length of the head; ocelli widely separated, the posterior pair almost touching the inner margins of the eyes on about a line across their centre; anterior ocellus forwardly directed. Postocular bristles short. Antennæ broken off in the unique specimen. Mouth-cone conical, large, reaching across the prosternum.

Prothorax transverse, about 0·75 the length of the head

and not quite twice as broad as long. Setæ present, those at posterior angles distinctly the longest, more than 0·5 the length of the prothorax. Legs rather long and stout. Pterothorax slightly broader than prothorax. Wings reaching to abdominal segment 9, linear, fore-wing fourteen to fifteen times as long as broad, with cilia somewhat sparse, but long; no duplicated cilia.

Abdomen rather elongate, broader than pterothorax; tube widest beyond apical half, about 1·4 times as long as the head and about 0·35 as broad as long, roundly and sharply narrowed at tip. Surface roughly carinate to beyond apical third with the interstices roughly sculptured or punctured. Apical hairs short and weak. Abdominal bristles strong, yellowish or colourless, those at hind angles of segment 9 as long as the tube and those on 7 longer than those on 8; wing-retaining setæ apparently in single pairs.

Loc. SEYCHELLES. Silhouette: 1 example (? ♀), Mare aux Cochons plateau, about 1000 feet, ix. 1908.

8. *Acallurothrips macrurus*, sp. n.
(Pl. V. figs. 1, 2.)

Length 1·6 mm.; breadth of pterothorax 0·4 mm.

Brownish-black, shining, fore-tibiæ (and knees) lighter brown. Antennæ with two basal joints yellowish-brown, three yellowish, rest dark brown. Wings brown, cilia smoky-brown.

Head transverse, about 0·85 as long as broad, and a little longer than the prothorax; cheeks subparallel, with a minute seta behind the eye and another near base. Eyes moderately finely faceted; posterior ocelli on a line across middle and touching their inner margins; postocular bristles present, as long as the eye. Antennæ about twice as long as the head, intermediate joints broadly clavate, relative lengths of segments 3-8:—22:19:18:16:14:12. Mouth-cone large.

Prothorax large, about 1·8 times as broad as long; setæ present, short; those at posterior angles the longest and not 0·35 as long as the prothorax. Pterothorax broader than the width across fore-coxæ. Wings reaching to abdominal segment 8; fore-wings rather broad, little more than ten times as long as broad.

Abdomen ovate, broadest at segment 6, thence rounding to 9; segment 9 strongly transverse. Tube broadest at base, narrowed distally (evenly with straight sides in microscopical preparation, roundly in the same specimen on card

before mounting) and sharply constricted at extreme apex; dorsal carinations running into distal half. Apical hairs minute, weak. Abdominal bristles strong, yellowish or colourless, outer pair on 9 longer than the tube.

This species is easily separated from *A. proturus* by its larger and broader form, the broader wings, the size and shape of the tube, and the minute setæ on prothorax.

Loc. SEYCHELLES. Mahé: one example only, top of Mount Sebert, nearly 2000 feet, 1908-9. (Sex uncertain, probably ♀.)

GENUS CÆNUROTHRIPS, NOV.

Size small. Closely allied to *Acallurothrips*, but distinguished by the form of the tube, which approaches the normal, though furnished with the basal longitudinal ribs. The head of the type-species is large, as long as broad with the sides converging behind, and the mouth-cone not so large comparatively. The prothorax is considerably shorter than the head. Fore-wing with duplicated cilia.

Type. *Cænurothrips brevicollis*, mihi.

9. *Cænurothrips brevicollis*, sp. n.
(Pl. V. figs. 5, 6.)

♀.—Length about 1·8 mm., breadth of pterothorax 0·4 mm.

Head and thorax dark chestnut-brown, abdomen darker: fore-tibiæ and all femora distally yellowish. Antenna with segments 1-3 lightish brown, 3 with base yellowish; 4 darker than 3 and 5-8 deep black-brown. Wings brownish-yellow, cilia smoky.

Head about as long as broad, converging posteriorly, broadest behind eyes. Eyes moderately finely faceted, occupying 0·3 the length of the head. Postocular setæ long. Ocelli widely separated, posterior pair near inner margins of eyes and on a line through their middle; anterior one forwardly directed. Antennæ not quite twice the length of the head; apical and penultimate joints closely united; relative lengths of 3-8 approximately as follows:—32:29:27:25:16:12 (together 26). Mouth-cone not so large comparatively as in *A. proturus* and *A. macrurus*.

Prothorax only 0·4 the length of the head, strongly transverse, about three times as broad as long. Setæ short, excepting the postero-marginal ones, which are about 0·75 the

length of the prothorax. Pterothorax broad, about as broad as long. Fore-wings rather broad, about ten times as long as broad, with 8-12 duplicated cilia. Fore-femora incrassate.

Abdomen elongate-ovate, gently rounded from segment 7 to 9. Tube more normal in form than in either *A. proturus* or *A. macrurus*; about 0.9 the length of the head, broadest at base, where it is about 0.55 as broad as long; evenly narrowing, with straight sides, distally and but slightly constricted just before tip; dorsal carina reaching to the distal half. Apical hairs slender, dark, about 0.6 the length of tube. Abdominal bristles strong, yellowish or colourless; those on 7 and 9 nearly as long as tube.

♂.—With the tooth of the fore-tarsus slightly stouter than in the ♀.

Loc. SEYCHELLES. Mahé: 1 ♂ and 1 ♀, Cascade Estate, 800-1000 ft.; 2 ♀, top of Mount Sebert, nearly 2000 feet, i. 1909.

10. *Cæurothrips validus*, sp. n.

(Pl. VI. figs. 4, 5.)

♀.—Length c. 1.8 mm.

Colour chestnut-brown; fore-tibiæ a shade lighter and tarsi yellowish-brown. Wings lightly fumate.

Head approximately as broad as long, 1.3 to 1.4 times as long as the prothorax. Eyes moderately finely faceted, small, occupying about 0.25 times the dorsal length of the head; postocular setæ long, about 1.5 times the length of the eye. Ocelli much as in *C. brevicollis*; interocellar setæ prominent. Antennæ Mouth-cone much as in *C. brevicollis*.

Pronotum transverse, twice as broad as long; all setæ well-developed. I find it impossible to judge the lengths of the postero-marginal setæ; the mid-lateral ones are about one-sixth the median length of the pronotum and the antero-marginal pair shorter again. Pterothorax stout, broader than long. Legs rather stout; fore-legs with the femora strongly incrassate and the tarsus armed with a stout tooth. Wings much as in *C. brevicollis*; fore-wings with eight duplicated cilia.

Abdomen stout, broadly ovate, broadest at segments 3 to 6, and very broadly rounded to base of tube; tube as in *brevicollis*, but longer and comparatively less stout, as long as, or slightly longer than the head, about twice as long as broad at base, and slightly constricted at tip. Apical hairs

weak, dusky, only about 0·5 the length of the tube. Abdominal bristles strong, brown or yellowish-brown, the longest on 9 about 0·8 the length of tube and those on 7 and 8 not so long.

This species is readily separated from *brevicollis* by its more bulky form, shape of head, longer tube, etc., etc.

Loc. SEYCHELLES. Silhouette : 1 ♀, Mare aux Cochons, ix. 1908.

Genus GYNAIKOTHRIPS, Zimm.

11. *Gynaikothrips scotti*, sp. n.*
(Pl. VII. figs. 10, 11.)

♀.—Length about 2·2 mm.

Colour chestnut-brown, distal third or so of tube lighter than the rest; fore-tibiæ yellow shaded with grey-brown, all tarsi yellow. Antennal joint 1 concolorous with head, 2 lighter brown distally, 3 clear yellow, 4 to 6 yellow deepening in intensity, 7 yellow tinged with brown, and 8 a deeper brown. Wings lightly fumate in fresh specimens, but losing colour in carded examples, and in some, when mounted, quite clear.

Head 1·15 times longer than broad and approximately 1·5 times the length of the pronotum; surface finely striated transversely; cheeks parallel, converging slightly near base, and furnished with a very few micro-setæ. Space between eyes about the breadth of one of them; ocelli placed anteriorly (that is, above a line drawn through the centre of eyes and contiguous to their inner margins), large with the median one overhanging and directed forwards. Post- and interocellar setæ minute. Eyes somewhat minutely, closely, and smoothly faceted, occupying dorsally about 0·4 the length of the head; postocular bristles present, short, 0·5 to 0·6 the length of the eye, and rather stout. Antennæ much as in *G. fumipennis*, Karny, and *karnyi*, Bagn.; relative lengths of segments 3 to 8 approximately as follows:—28 : 26 : 24 : 25 : 21 : 11. 3 and 4 clavate, 4 broader than 5 and 5 broader than 3; long slender trichomes on 3 to 6.

Pronotum basally much broader than anteriorly; twice as broad as the median length. The postero-marginal

* I find great pleasure in dedicating this species to Dr. Hugh Scott, whose work has so greatly advanced our knowledge of the Entomology of the Seychelles Islands.—R. S. B.

pronotal setæ long, the outer pairs attaining to 0·65 the length of the pronotum, rather stout and faintly dilated at apex; the mid-lateral pair also prominent and rather stout, about 0·4 the length of the pronotum. Legs normal, fore-femora incrassate, sparingly and minutely setose; fore-tarsus unarmed; hind-femora stouter and longer than the median pair, with the upper margin gently curved. Pterothorax quadrate, sides practically straight, converging gently posteriorly; as broad anteriorly as the breadth across fore-coxæ. Wings normal, fore-wings about 11 times as long as the median breadth, furnished with from 13 to 17 duplicated cilia.

Abdomen somewhat heavy, elongate and scarcely broader than the pterothorax, roundly narrowing from segment 7 to base of tube. Tube slightly longer than the head, rather sharply narrowed apically from the distal third or thereabouts; more than twice as broad at base as at tips. Apical bristles 0·8 the length of the tube, slender, dusky basally. Abdominal bristles long, moderately slender; those on segment 9 almost as long as tube and very slender.

All setæ light, some colourless, others yellowish.

♂.—Size smaller; body more slender and comparatively shorter. Fore-femora only slightly more incrassate than in the ♀; fore-tarsus armed.

Loc. SEYCHELLES. Mahé: 2 ♀, Cascade Estate, 800 ft. and over; 5 ♀, 4 ♂, Long Island, 12–22. vii. 1908; 1 near Morne Blanc; jungle between Trois Frères and Morne Seychellois, about 1500–2000 feet, xii. 1908, 3 ♀.

Silhouette: numerous examples from the Forest above Mare aux Cochons, the plateau and near by, September 1908, almost entirely ♀; 1 ♀ from high country and one from near Mont Pot-à-eau, at about 1500 feet, August 1908.

GENUS CRYPTOHRIPS, Uzel.

12. *Cryptothrips seychellensis*, sp. n. (Pl. VII. figs. 1 & 3.)

♀.—Length 2·6 to 2·9 mm.

Colour dark blackish-brown; fore-tibiæ yellowish-brown, with margins almost to apex darker; all tarsi and tips of intermediate and hind tibiæ narrowly brownish-yellow. Antennæ with segments 1, 6, 7, and 8 concolorous with head; 2 yellowish-brown to dingy yellow distally, 3 uniform

dingy yellow ; 4 deeper yellow suffused with grey-brown at apex ; 5 grey-brown, yellowish in the basal half or thereabouts. Wings very faint smoky greyish-yellow, a median vein or thickening, extending to apical fourth, brown.

Head approximately 1.5 times as long as broad, cheeks gently arcuate in their basal three-fourths, minutely and sparingly spinose. Space between eyes 1.6 the width of one of them. Eyes smoothly faceted, small, occupying about one-fourth (0.25) the dorsal length of the head ; postocular bristles situated just behind each eye, somewhat stout and about the length of the eye. Ocelli large, placed anteriorly, the anterior one overhanging, forwardly directed, posterior pair on a line drawn through the anterior third of eyes near their inner margin, and, therefore, widely separated ; post-ocellar setæ about 0.6 the length of the postocular pair.

Antennæ approximately twice as long as the head, joint 3 elongate clavate, 4 and 5 clavate ; the relative lengths of 3 to 8 approximately as follows :—66 : 59 : 48 : 38 : 27 : 20. Trichomes short and stout.

Pronotum transverse, about 0.55 the length of the head and twice as broad as long. Pronotal setæ evidently prominent, those on the posterior margin the longest and stoutest (the outer of them in the only specimen in which these bristles have been preserved, being 0.7 the median length of pronotum) and the mid-lateral pair coming next ; antero-marginal pairs short and weak. Pterothorax quadrate, broader than the breadth across fore-coxæ. Legs normal, fore-tarsi unarmed. Fore-wing with 19–22 duplicated cilia (26 in the solitary ♂ example).

Abdomen heavy, broader than pterothorax subparallel to segment 6, 6 narrowing posteriorly, and 7 to 9 roundly narrowed to base of tube. Tube as long as or slightly longer than the head, twice as broad at base as at apex ; terminal bristles dusky basally, colourless and very slender distally, about 0.7 the length of tube. Abdominal bristles stout and long, yellowish to light yellowish-brown ; a pair on 9 the longest, about 0.75 the length of the tube ; those on 8 much shorter and spine-like, an inner dorsal pair dark brown in colour ; those on 6 and 7 long, about 0.7 to 0.8 the length of those on 9 and stronger.

♂.—Fore-femora strongly incrassate, fore-tarsus with a broadly-seated stout tooth ; pterothorax moderately convex. Bristles on earlier abdominal segments stouter than in ♀ (the preparation in the ♀ is so opaque that a true comparison is impossible) ; the short setæ at each hind-angle

of 4 to 9 is distinctly spine-like, and there are two long, stout, dark postero-marginal bristles on segments 4 to 6 at least, and 1 on 3.

Loc. SEYCHELLES. Mahé: Cascade Estate, about 1000 feet, i.-iii. 1909, 3 ♀, 1 ♂.

13. *Cryptothrips difficilis*, sp. n.
(Pl. VII. figs. 2, 4.)

♀.—Length 3·2 mm.

This species comes very near to *C. seychellensis*. There is unfortunately only one specimen, but, apart from its larger size, a number of small differences may be observed. The head is comparatively longer (63 : 40 compared to 57 : 40), and the checks practically subparallel. The postocular bristles are much longer and more slender, being 1·7 times the length of the eye, whilst the interocellar pair are placed nearer together. The antennal segments 3 and 4 are of a uniform deep yellow (or light brownish-yellow), the fourth not shaded with brown at apex as in *seychellensis*. The pronotum is not so strongly transverse, and the width across fore-coxæ is less compared to the breadth of the pterothorax.

Loc. SEYCHELLES. Silhouette: near Mont Pot-à-eau, about 1500 feet, August 1908, 1 ♀.

GENUS ADIAPHOROTHRIPS, Bagnall.

14. *Adiaphorothrips brevis*, sp. n.
(Pl. IV. fig. 6.)

♂.—Length 2·4 mm.

Dark black-brown to black, shining; fore-tibiæ dark yellowish-brown; antennæ black, second antennal joint distally and third wholly light yellowish-brown, fourth chestnut-brown.

Head very slightly longer than broad; cheeks parallel, spinose. Eyes finely faceted, postocular bristles long; ocelli red, posterior pair touching inner margin of eyes and on about a line drawn through their centre; anterior ocellus forwardly directed with two minute but stout spinelets on each side. Antennæ about twice the length of the head, stout; joints 3 to 5 claviform; 4 only slightly shorter than 3; 7 and 8 closely united. Sense-cones moderately longer, slender.

Prothorax massive, broadly united to the pterothorax,

not quite so long as the head, broadest near base, where it is about 2.25 times as broad as long. Surface smooth and shining, convex; sides arched to base, margined; base also margined. A pair of foveæ indicated—one on each side of the centre line near the anterior margin, with a curved depression behind. Bristles long, the pair at posterior angles about 0.65 the length of the prothorax; those at anterior angles directed forwards, straight. Pterothorax very slightly broader than the prothorax, transverse. Wings broad, parallel-sided, reaching to the ninth abdominal segment, fore-wings with approximately thirty duplicated cilia; cilia smoky-brown. Legs rather short and stout, fore-femora strongly incrassate; tibiæ stout and tarsus armed with a stout tooth.

Abdomen broadly united to pterothorax, broadest at about the sixth segment, where it is about 1.2 times as broad as the prothorax; segments strongly transverse. Tube a little longer than the head, stout; surface strongly sculptured, in some lights having a scale-like, in others a punctate, appearance; extreme apex smooth. Terminal bristles as long as the tube; yellowish-brown, darkest basally. Bristles on 9 and 7 as long as the tube. Other abdominal bristles moderately long and stout.

Loc. SEYCHELLES. Mahé: 1 ♂, high damp forest between Trois Frères and Morne Seychellois, about 1500–2000 ft., xii. 1908.

Separated from *A. simplex*, Bagn., and *A. antennatus*, Bagn. (Bornean species), by its smaller size, shorter and stouter form, and the short head, which in *simplex* and *antennatus* is 1.7 and 1.5 times as long as broad, respectively. The intermediate antennal joints are relatively much shorter.

GENUS EURYNOTHRIPS, Bagnall.

15. *Eurynothrips denticollis*, Bagnall.

This species, described in 1908 from Queensland examples, is represented in Mr. Scott's collection by one male example. Its presence in the Seychelles fauna is surprising, as it has not been up to now recorded outside Queensland.

Loc. SEYCHELLES. Mahé: 1 ♂, near Morne Blanc, x.–xi. 1908.

Genus LIOTHRIPS, Uzel.

16. *Liothrips nigricornis*, sp. n.
(Pl. V. figs. 7-9.)

Length 3.5 to 4.2 mm.

Colour black, shining; fore-tibiæ, all knees and tarsi chestnut-brown; antennæ black with the extreme base and apex of joint 3 very narrowly and scarcely noticeably yellowish.

Head approximately 1.6 times as long as broad across base of eyes, where it is broadest, swollen dorsally, and narrowed towards neck. Surface irregularly transversely striate. Eyes small, occupying about 0.2 the dorsal length of head; finely faceted. Ocelli large, not touching inner margins of eyes; anterior ocellus forwardly directed. Minute inter- and post-ocellar setæ present; postocular bristles rather long. Cheeks sparingly and minutely setose. Mouth-cone reaching beyond prosternum. Antennæ about 1.8 times the length of the head; relative lengths of joints 3 to 8 as follows:—17:16:14:10:7:4, 3 and 4 broader than 5, 3-5 mildly clavate; 6 fusiform; 7 and 8 rather broadly united with 8, obconical or obpyriform.

Prothorax transverse, less than 0.5 the length of head, and twice as broad as long; setæ light-coloured, rather short, excepting those on posterior margin, the outer pair (at posterior angles) of which are about 0.7 the length of the prothorax. Prothorax broader than width across fore-coxæ, about as long as broad. Wings tinted with yellow; median veins brownish-yellow; cilia smoky. Fore-wing slightly narrowed in the median fifth, where it is about one-twelfth as broad as long. Cilia close, with a long duplicated series of over 40. Fore-legs with femora incrassate; tibia stout and tarsus armed with a strong tooth. Hind and intermediate tibiæ with a moderately long fine seta on the outer margin below knee (in basal third) and another near apex.

Abdomen scarcely broader than pterothorax, narrowing gently from segment 4. Tube long and rather stout; about 1.2 times as long as the head, more than 4 times as long as broad at base, gently narrowing to apical fifth and then somewhat markedly constricted before apex; terminal hairs not strong, yellowish-brown basally; about or a little more than 0.5 the length of tube. Lateral abdominal bristles long and strong, yellow to dusky yellow. Longest pair of

bristles on 7 at least twice as long as those on 8, and about 0.6 the length of the tube. Those on 9 as long as the tube.

Easily recognised by the wholly black antennæ and the posteriorly convergent cheeks, this latter character bringing it in the same group as *L. elongatus*, Bagnall (*vide* Karny's table, Trans. Ent. Soc. 1912, pp. 470-475), in which species the third antennal joint is yellow and the tube exceptionally short.

Loc. SEYCHELLES. Silhouette: 7 ♂, Mare aux Cochons and forest above, September 1908.

17. *Liothrips intrepidus*, sp. n.

♂.—Length c. 3.3 mm.

This species so closely approaches *L. nigricornis* in every way that a separate description is unnecessary. The head is shorter and only 1.35 times as long as broad. The antenna is about twice as long as the head. The prothorax is more massive and convex, broader, more than half as long as the head and 2.3 times as broad as long. The tube is slightly longer than the head, and the abdominal bristles are shorter, those on segment 9 being but one-half as long as the tube.

The relative lengths of the third and fourth antennal joints appear to differ, but unfortunately they are mounted at an angle. The insect is noticeably smaller than *L. nigricornis*. Unfortunately, there are but two examples and one is so distorted in mounting that I have considered it advisable to destroy it (though better than the type-specimen in its abdominal chætotaxy) rather than risk it misleading future students. I hope that further examples may be forthcoming.

Loc. SEYCHELLES. Silhouette: Mare aux Cochons and forest above, September 1908.

18. *Liothrips* sp. (? *micrurus*, Bagn.).
(Pl. VI. figs. 1-3.)

There is one mutilated ♀ example of a species of *Liothrips*, which if not identical with *L. micrurus* is very closely related to it. The tube is longer than in mounted examples of *L. micrurus*, and the head is also longer, but the specimen may be a large example. The mount is of such a fragmentary nature that it is impossible to say more.

L. micrurus is an Egyptian insect found on *Zyziphus*.

Loc. SEYCHELLES. Mahé: 1 ♀ from country above Port Glaud, about 500–1000 ft., 5. xi. 1908.

Family *Idolothripidæ*.

Genus *DICAIOTHRIPS*, Buffa.

19. *Dicaiothrips seychellensis*, sp. n.

♀.—Length 3·4 to 3·8 mm.

Dark black-brown to black, third antennal joint yellowish-brown, darker at apex.

Head 2·6 times as long as broad; eyes occupying a little more than 0·2 and produced part about 0·12 the total length. Cheeks narrowed behind eyes and thence swollen before base, genal spines knobbed, sparse, colourless; postocular bristles longer than the eye, light-coloured; antecular pair also long, stouter than the postocular pair and similarly lightly coloured. Eyes bulging, finely faceted; ocelli situated as in *D. levicollis*, Bagn., and *D. foveicollis*, Bagn. Antennæ about 1·5 times as long as the head; joints 3 to 5 mildly claviform; 7 and 8 practically subequal in length; relative lengths of 3 to 8 approximately as follows:—57 : 51 : 46 : 34 : 24 : 22, as compared to 72 : 66 : 57 : 36 : 24 : 21 in *D. falcatus*, Karny. Maxillary palpi with the second segment approximately four times the length of the first.

Pronotum medianly 0·3 the length of head and twice as broad posteriorly as long. Setæ light-coloured; antero-marginal pairs short; mid-lateral and postero-marginal pairs long, the outer postero-marginal setæ about 0·6 of the length of the pronotum. Legs normal, fore-tarsus with a very short broad-seated blunt tooth. Pterothorax as broad as long, a little broader than the width across the fore-coxæ. Fore-wings about fourteen times as long as broad across middle, clear with cilia dusky and closely set; 30 duplicated cilia (in six counts—29 once, 30 four times, and 32 once).

Abdomen narrowing gently from the fourth segment to the base of the tube. Tube 0·8 the length of the head, sides gently narrowed, distally about twice as broad at base as at apex. Terminal hairs weak, about 0·6 the length of the tube. Abdominal bristles fairly long, yellowish, blunt or faintly knobbed, excepting those on segment 9, which are pointed, darker, and very long, slightly longer than the tube.

♂.—Smaller and more slender, with the tube only 0·7 the length of the head. Fore-femur incrassate with a prominent "sickle" bristle; setæ on outer margin moderately short

and stout; of the sparse dorsal setæ one, backwardly directed as though to protect the trochanter, appears to be more than usually stout. Fore-tibiæ at distal angle within obtusely produced, and fore-tarsus with a long stout tooth. Abdominal segments 8 as long as 7 and a little more than one-half the length of the tube. Duplicated bristles of fore-wings 25 and 27 in the single example from Mahé and 27 and 29 in the Silhouette specimen.

Loc. SEYCHELLES. Mahé: 2 ♀, country above Port Gland, about 500–1000 ft., 5. xi. 1908; 2 ♀, 1 ♂, Cascade Estate, 800–1000 ft., i. 1909. Silhouette: 1 ♂ and 2 ♀, taken from long grass in cultivated country near Mont Pot-à-eau, about 1500 ft., Aug. 1908.

This description is taken from Mahé examples. The single ♂ example from Silhouette has the postocular bristles set curiously far back, whilst the genal chaetotaxy is comparatively weaker. The fore-femur is more strongly incrassate and apparently more generously spinose and setose. The smaller and weaker genal spines are also shown in both the Silhouette ♀ ♀ and in one ♀ from Mahé, these latter examples also agreeing in the possession of a comparatively broad head, caused, I believe, by a difference of treatment, the microscopic mounts having been made at a much later date.

Of the species of *Dicaiothrips* described from the Indo-Malayan and African regions, two are separated from all others by the fact that all the antennal joints excepting only the third are uniformly dark. They are *D. denticollis*, Bagn. (Malay Archipelago), of which Buffa's *schöttii* (non Heeger) is probably synonymous, and *D. falcatus*, Karny. *D. denticollis* is a very much larger insect than the one just described and any further comparison is unnecessary. *D. falcatus* is only slightly larger (3·8 to 4·6 mm. in length), and differs in the relative lengths of the antennal segments, most noticeably 3 to 5, which are longer than in *D. seychellensis*, and in the shorter tube, which is but 0·6 the length of the head. The antennæ are only one-third longer than the head in *falcatus*, whilst there are forty duplicated cilia in the fore-wings.

20. *Dicaiothrips rex* *, sp. n.
(Pl. VII. figs. 5, 6.)

♂.—Length 5·0 mm.

Colour brown, including all femora, tibiæ, and tarsi,

* Described on the eve of November 11th, 1918, and dedicated to His Most Gracious Majesty King George V.

excepting the fore-tarsi which are yellowish. Wings practically clear, exhibiting but the slightest trace of a sulphurous yellow tinge; cilia dusky. Antennæ (excepting the two basal joints) unfortunately lost in the unique example.

Head long and slender, 3.3 times as long as broad at base. Eyes occupying about 0.2 and the produced part 0.12 of the total length. Postocular and anteocular bristles rather long; genal spines few, three pairs (one immediately behind eyes, one near middle, and one basal) prominent. A dorsal pair of bristles on the same line as the mid-lateral genal spines.

Pronotum about 0.45 the length of the head and 1.6 times as broad as long. Apparently only the postero-marginal setæ prominent and those of the outer pair are seemingly less than 0.3 the median length of the pronotum. Fore-coxa produced, forming a seat for the coxal spine. Fore-femora strongly incrassate, armed with some stout setæ on outer margin near base; fore-tibia stout, distal inner angle sharp; fore-tarsus with a stout broadly-seated tooth. Wings with closely ciliated margins, fore-wings with forty-nine duplicated cilia.

Abdomen gradually narrowing from base, no great disparity between the lengths of segments 7 and 8, the latter being the longer. Tube approximately 0.6 the length of the head; terminal hairs weak distally and about 0.75 the length of the tube. Abdominal bristles light-coloured and moderately long; those on segment 9 about 0.8 the length of the tube; the longest on 4 to 7 only from 0.4 to 0.5 the length of those on 9.

D. rex is the same length as, and can only be compared with, an East African species, *D. stenocephalus*, Bagn., from which it is readily separated by numerous differences in the chætotaxy. The ante- and postocular bristles are longer in *D. stenocephalus*, whilst all the pronotal setæ are well developed. On the other hand, the genal setæ in that species (*stenocephalus*) are shorter without the markedly outstanding pairs, other than the pair immediately behind the eyes, and more numerous. The hind and intermediate femora and tibiæ in both species are furnished with rows of short setæ, which in *D. rex* are distinctly shorter and more slender and therefore less noticeable than in *D. stenocephalus*. *D. rex* is a stouter insect, the front femora are longer and much more incrassate, and the width (12:5, as compared with 10:4) of the pterothorax is about one-fifth (0.2) greater than in *D. stenocephalus*.

The head is longer in *D. rex* than in *D. stenocephalus* (13:11·5), and the tube the same length in the two species, and therefore shorter in comparison with the head in *D. rex*.

Loc. SEYCHELLES. Silhouette: Mare aux Cochons, 6. ix. 1908, 1 ♂.

21. *Dicaiothrips mahensis*, sp. n.
(Pl. VII. fig. 9.)

♂.—Length 5·5 to 6·0 mm.

Colour dark chestnut-brown to black-brown; fore-tarsi yellowish-brown. Wings faintly tinged with sulphurous yellow and cilia fumate. Antennal joint 3 light lemon-yellow with a narrow dark brown ring at extreme apex; 4 also yellow with distal third brown and a very narrow ring of brown at extreme base; 5 with basal half or thereabouts yellow and the apical half brown; 1 and 6–8 dark black-brown and 2 brown to yellowish-brown distally. Sickleshaped spine of fore-femur yellow and abdominal bristles light-coloured.

Head approximately 2·7 to 3·0 times as long as broad at base; eyes occupying 0·2 and the produced part about 0·12 the total length. Postocular bristles set well back, rather long, antocular pair moderately long. Genal spines, excepting for the pair behind the eyes short and more or less subequal. Antennæ 1·5 times the length of the head, slender; relative lengths of joints 3–8 approximately:—47:40:34:21:14:13. Sense-trichomes moderately long, slender, colourless, on segments 3 to 5, and a short stout one on inner side of 6; of the protective bristles one on the outer side of each of the segments 3 to 5 is noticeably long.

Pronotum 0·4 the length of the head and 1·7 times as broad as long. Setæ of posterior margin prominent, the outer pair longer than the inner and approximately 0·6 the median length of the pronotum; mid-lateral and anteromarginal pairs apparently minute. Fore-coxæ prominent, produced to form a seat for the coxal setæ; fore-femora very strongly incrassate and armed with several stout spines on the outer margin of the basal third or thereabouts; fore-tibia stout, distal inner angle produced; fore-tarsus with a long stout tooth. Pterothorax broader than the width across fore-coxæ, broadest in the region of the suture of meta- and mesothorax. Wings closely ciliated, with 45:48 duplicated cilia in one specimen and 50:54 in another.

Abdomen gradually narrowing from base, where it is

narrower than the pterothorax, with no great disparity between the lengths of segments 7 and 8, the latter being the shorter. Tube approximately 0·6 the length of the head, sides gently narrowed to near apex and then faintly constricted. Terminal hairs weak distally, about 0·7 the length of the tube. Abdominal bristles light-coloured and moderately long, those on segment 9 about 0·8 the length of the tube.

This species differs from *D. rex* in its larger size, darker colour, stouter head, and the absence of the outstanding genal spinelets other than the pair immediately behind the eyes. From *D. stenocephalus* it differs in its stouter head, the longer intermediate antennal joints, the shorter post-ocular and anteocular bristles, seemingly stouter and shorter genal spinelets, the more strongly incrassate fore-femora, etc. In *D. stenocephalus* there are a pair of longish bristles on the intermediate tibiæ in the basal third, which are not nearly so long and prominent (about 0·5 the length) in this species, whilst the minor setæ of the intermediate and hind femora and tibiæ are more as in *D. rex* than in *D. stenocephalus*.

Loc. SEYCHELLES. Mahé: 2 ♂ from near Morne Blanc, x.-xi. 1908.

There is a ♂ example from Mahé (Cascade Estate, about 1000 feet) which is apparently referable to this species, but differs in many ways. The head is slightly shorter, whilst there is a prominent pair of genal spines below the middle; and the produced part is comparatively less. The antennæ are of a deeper yellow or light brownish-yellow where they are lemon-yellow in the form just described. The pronotum is shorter and the postero-marginal setæ are shorter, the outer part being of a light yellow colour, whilst the coxal spine is also comparatively shorter (8:10). There are only forty duplicated cilia in the fore-wing. I have labelled it *D. mahensis* var., provisionally.

22. *Dicaiothrips hystrix*, sp. n.
(Pl. VII. fig. 8.)

♀.—Length 3·7–4·0 mm.

Colour dark chestnut-brown; third antennal joint lemon-yellow lightly tinged with brown at apex and narrowly ringed with dark brown at extreme apex; four similarly yellow with the distal third or more brown and the extreme

base narrowly ringed with darker brown; 5 with the basal third yellow in the Silhouette specimens, but yellow-brown to light brown in most of those from Mahé.

Head 2·6 times as long as broad; eyes occupying 0·23 and produced part about 0·14 the total length. Cheeks feebly arcuate in the basal half, genal spines few, one immediately behind eye and one near base somewhat stronger than the others and in some cases also a median pair; faintly knobbed. Postocular bristles long, much longer than the length of the eye; antocular pair also long, brown. Eyes bulging, faintly faceted; ocelli situated as in *D. rex* and others. Antennæ about 1·6 times as long as the head; joints 3 to 5 mildly claviform; relative lengths of joints 3 to 8 approximately as follows:—68:60:49:37:26:25.

Pronotum medianly 0·4 the length of the head and about 0·6 as long as broad; all setæ very fully developed, yellowish-brown; the pair at posterior angles approximately 0·7 the length of the pronotum; the inner posterior marginal pair longer, viz. 0·8 the length; the mid-lateral pair 0·6 and the pair at anterior angles 0·4 the length of the pronotum.

Pteronotum very slightly broader than long. Wings faintly tinged with yellowish-brown, rather broad, reaching to about the seventh abdominal segment; fore-wings about thirteen times as long as broad near middle and furnished with 27 to 38 duplicate cilia. Legs normal, fore-femur slightly incrassate, with a noticeable swelling at the apical third within and a long hair equal in length to the breadth of the femur near basal third within.

Abdomen somewhat heavy, basally stouter than pterothorax, and narrowing from the third segment; tube about or perhaps slightly more than 0·8 the length of the head, narrowing gently to distal third and thence more sharply to apex, where it is rather noticeably constricted and one-half, or less than one-half as broad as at base. Terminal hairs about 0·55 the length of the tube. Abdominal bristles much as in *seychellensis*, those on segment 9 nearly as long as the tube.

♂.—Smaller and more slender with the tube only 0·65 to 0·7 the length of the head. Fore-femur not strongly incrassate and with the swelling at distal third within noticeable; sickle-shaped spine stout in the only specimen in which it has been preserved; several scutish spines on outer margin near base; segments 7 and 8 of abdomen practically subequal, the latter being slightly shorter upon measurement (12:11), and about 0·4 the length of the tube

in the type-specimen. Duplicate bristles of fore-wings 26 to 32.

Loc. SEYCHELLES. Silhouette: 2 ♀ and 1 ♂, from which the types are taken, from Mare aux Cochons, 6. ix. 1908; 2 ♀, 1 ♂, Mare aux Cochons (or the forest immediately above). Mahé: 3 ♀, 4 ♂, country above Port Glaud, about 500-1000 feet, 5. xi. 1908; 2 ♀ and 1 ♂, Cascade Estate, about 1000 feet, ii. & iii. 1909; and 9 ♀ and 6 ♂ near Morne Blanc.

The pronotal chætotaxy is distinctive. This appears to be the commonest species of *Idolothripidæ* on the Islands.

ADDENDUM ON MATERIAL FROM RODRIGUES.

Since the original material from the Seychelles Islands was dealt with, Dr. Scott has, as already stated, sent me a small but intensely interesting collection of thrips from Rodrigues Island. Some general remarks on this island and on the affinities of the material will be found above (p. 260).

Suborder TEREBRANTIA.

Family Thripidæ, Uzel.

1. *Tryphactothrips brevisetis*, Bagn.

There are six carded examples (since prepared as microscopic mounts) apparently referable to this species, and separated at once from the two known species, *rutherfordi* (Bagn.) and *roboris*, Bagn., by the short wing-setæ. The West-African species, *roboris*, is quite different from the other two, and readily recognized by the short and strongly transverse head and pronotum.

Form and size as in *rutherfordi*, golden-yellow to yellow-brown, suffused with grey-brown and more darkly brown at the sides of head, pronotum, pterothorax, and abdomen excepting the three apical segments; fore-legs yellow lightly tinged with yellow-brown; hind-tibiæ and all tarsi also yellow; hind-femora light brown, intermediate femora and tibiæ dark black-brown, yellowish at knee. Antennæ with joints 1 and 2 yellowish-brown, 3 to 5 clear yellow, and 6 to 8 brown, extreme base of 6 narrowly clear yellow.

The curious explanate frill-like margins of the head and pronotum appear to be less prominent than in *rutherfordi*,

but unfortunately this delicate structure is mutilated in the whole of the material through mounting dry.

Antennæ of same type as in *Dinurothrips hookeri*, slender, about 2·2 times as long as the head, with faint chitinous rings; segments 3 and 4 vase-like in form and abruptly narrowed in the apical fourth, 5 normally clavate; 6 to 8 closely united, narrowing from the distal third of 6 and produced, 8 being a long, slender, pencil-like segment. Trichomes colourless, simple, very long, and very slender. Relative lengths of joints 3 (including stem) to 8 approximately as follows:—26 : 22 : 18 : 15 : 5 : 11.

Fore-wings broad at base, thence narrow and parallel to near tip; about sixteen times as long as broad near middle. Medianly at base, margins of scale and fork of the veins brown, otherwise basal third only lightly tinted, then a band of grey-brown occupying one-eighth the wing-length, and a similar dark band occupying about one-fourth the wing-length just before the tip. Spines short and stout, mostly dark brown in colour; one at fork of veins; four in upper vein—that is, one light one near fork and another near tip of wing, a dark one at beginning of first dark patch and another near end of second dark patch; six in lower vein widely spaced, but approximately 2+1+1+2 or 2+2+2; costa, commencing on a line with vein-fork, with eleven short spines.

I have little doubt but that this is the same species as recorded from the Seychelles Islands. There is some variability in the arrangement of the six spines of lower vein in the fore-wing. In the Mahé example there is one extra in the middle pair, making seven, and on one wing of the Rodrigues material there is one less, making five. In some specimens the six setæ are more or less equidistant, thus reading 1+1+1+1+1+1.

Loc. RODRIGUES: females only.

Suborder TUBULIFERA.

Family Phlæothripidæ, Uzel.

2. *Cænurothrips minor*, sp. n.

♀.—Length about 1·4 mm.

Colour chestnut-brown; fore-legs yellow, the outer margin of the tibiæ and the femora shaded with brown; other femora yellowish, but strongly shaded with brown towards

the outer margin, and the tibiæ almost entirely brown. Wings fumate, basally somewhat darker. First antennal joint light brown; 2 and 3 yellow, the latter lightly tinged with grey-brown distally; 4 yellow, brown in distal two-thirds; 5 to 8 dark brown, with the base of 5 lighter.

Head as in *brevicollis*, but shorter, being about 0·8 as long as broad; postocular spines longer than the length of the eye, strong; interocular (or interocellar) spines about 0·6 the length of the postocular, also strong. Ocelli apparently much as in *brevicollis*, but difficult to make out in the single preparation. Antennæ about 2·4 times as long as the head, with apical and penultimate joints closely united; joints 3 and 4 clavate, 5 and 6 with short constricted stem; relative lengths of joints 2 to 8 approximately as follows:—40 : 50 : 44 : 42 : 40 : 26 : 23.

Pronotum transverse, about 0·6 the length of the head and about 2·4 times as broad as long. Setæ short except the postero-marginal ones, the outer pair of which appear to be about 0·4 the median length of the pronotum. Fore-wings with seven duplicated cilia. Fore-femora incrassate and fore-tarsi apparently unarmed; other legs stout.

Abdomen elongate-ovate, much broader than the pterothorax. Tube of normal form, about 0·8 as long as the head and 1·6 times as long as broad at base. Sides gradually narrowing to apical fifth, and then more noticeably constricted. Abdominal bristles of segments 7 to 9 stout, those on 9 apparently about as long as the tube; 6 without any, and those on 7 and 8 of approximately the same length and noticeably shorter than 9.

Near *C. brevicollis*, m., but readily separated by the smaller size, the coloration of antennæ, the longer and narrower pronotum and the smaller and more slender tube, the much shorter lateral abdominal bristles on segment 9, and the apparent lack of same on segment 6.

Loc. RODRIGUES: 1 ♀ only.

3. *Liothrips thomasseti*, sp. n.*

Length c. 4·0 mm.

Colour black, shining; fore-tibiæ and all tarsi brown. Antennal joint 3 brownish-black.

* Named in honour of Mr. H. P. Thomasset, whose careful field-work has done much to increase our knowledge of the zoological and botanical productions of the islands in the W.-Indian Ocean.

Head with cheeks subparallel, about 1·7 times as long as broad ; a pair of long, fine interocular bristles placed immediately behind the posterior ocelli ; postocular bristles also slender, remote from eyes, and situated approximately on a line with their inner margins. Antennæ as in *nigricornis*, about 1·6 times the length of the head ; relative lengths of joints 3 to 8 approximately as follows:—55:56:49:40:30:23.

Pronotum strongly transverse, about 0·4 as long as the head and at least 2·5 times as broad as long. All setæ present and well-developed ; outer postero-marginal pair 0·85 and the pair at anterior angles about 0·6 as long as the median length of pronotum. Wings as in *nigricornis*. Legs also much as in *nigricornis*, but fore-femur with several long and strong outstauding bristles on the outer margin, and the hair-like bristle at base of fore-femur within and those on outer margin of fore-tibia much longer than in *nigricornis*.

Abdomen as in *nigricornis* ; tube longer and more slender, about 1·25 times as long as the head and nearly five times as long as broad near base. Terminal hairs colourless except basally, slender, slightly more than one-half (0·5) the length of the tube. Lateral abdominal bristles long and strong, brown ; those on 9 about as long as the tube and those on 6 longer than in *nigricornis*, about 0·7 the length of 9.

Separated from *nigricornis* by the subparallel cheeks, the shorter and more strongly transverse pronotum, the chaetotaxy of the pronotum and fore-legs, and the longer and more slender tube.

Loc. RODRIGUES : two examples.

Examination of material of the genus *Liothrips* from the Mascarene Islands and the Seychelles has enabled me to draw up a table of species forming a group recognized by the black antennæ (the third joint being scarcely lighter in colour than the succeeding), with the tube longer than the head and the fore-wings with forty or more duplicated cilia:—

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|--|--|
| <p>1. Species with head converging posteriorly, and pronotal setæ (excepting the postero-marginal) short. (Seychelles.)</p> <p>Species with cheeks subparallel ; all pronotal setæ long and well-developed. (Rodrigues.)</p> <p>2. Size larger. Head longer, approximately 1·6</p> | <p>2.</p> <p><i>L. thomasseti</i>, Bagn.</p> |
|--|--|

- times as long as broad, with antennæ 1·8 times as long as the head. Bristles of abdominal segment 0·9 as long as the tube *L. nigricornis*, Bagn.
- Size smaller. Head shorter, 1·35 times as long as broad, with antennæ twice as long as the head. Bristles of abdominal segment 9 only one-half (0·5) as long as the tube *L. intrepidus*, Bagn.

Family *Ecacanthothripidæ*, Bagn.

Hood suggests that this family should be sunk as a synonym of *Phlæothripidæ*, despite the bizarre nature of the antennal sensoria—a character which must be regarded as of some importance when we remember that the type of sense-cones remains constant and the same throughout the other members of the *Tubulifera* (*Phlæothripoidea*) throughout the families *Phlæothripidæ*, *Idolothripidæ* (+ *Megathripidæ*), and *Hystriothripidæ*. Only in *Ecacanthothrips* (+ *Ormothrips*) do we find a striking departure in this direction. I may add that the type of antennal sensoria in the main families of the *Terebrantia* is peculiar and constant to each family (*vide* *Æolothripidæ*, *Heterothripidæ*, and *Thripidæ*).

Genus *ECACANTHOTHRIPS*, Bagn.

4. *Ecacanthothrips* sp.

There is a single ♂ example referable to the *sanguineus* group. It possesses the pilose fore-femora seen in Ceylon examples (*E. steinskyi*), but the intermediate antennal joints 5 and 6 would appear to be basally yellowish as in *sanguineus*, and not unicolorous as in *steinskyi*. The hind-femora have a series of six stout, erect, infundibuliform setæ along their upper margin, and the fore-wings a series of twenty-eight duplicated cilia (sixteen to twenty in *sanguineus*, teste Karny). The pronotal setæ of the fore-angles are very long. I have kept this specimen for future study.

According to Schmutz *steinskyi* has a series of fifteen to twenty duplicated setæ in the fore-wing, but of a series of material from Ceylon apparently representing two species both with the antennæ unicolorous (one of which is almost certainly *steinskyi*) all possess twenty or more duplicated setæ.

It is quite clear that all existing material of this group requires closer study in the light of recent advances. It would seem that *E. bryanti*, Bagn., is at once separated by

its very strongly pilose fore-femora, and *E. crassiceps*, Karny, by its short head; but *E. sanguineus* wants definitely fixing from New Guinea material, as also *E. steinskyi* from Ceylon. I have very little doubt that the genus is rich in species, but it is not desirable to describe further species till the type is better known. These remarks do not apply to a second group recognized by the simple fore-coxæ, containing *coxalis*, Bagn., and *flavipes*, Bagn., and in view of this second group it may be desirable to regard *Ormothrips inermis* as belonging to a third division of the genus *Ecacanthothrips*.

Divisions of the Genus Ecacanthothrips.

- | | |
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| 1. Fore-femora with a large tooth near base and another at apex within (♂) or a short tooth near the middle (♀). Fore-coxæ either produced or simple in the ♂. | 2. |
| Fore-femora and fore-coxæ simple in both sexes (<i>Ormothrips</i>) | Group 3 (containing <i>inermis</i> , Buffa). |
| 2. Fore-coxæ produced in the ♂, and more or less bent distally, set with several stout setæ | Group 1 (containing <i>sanguineus</i> , Bagn., <i>steinskyi</i> , Schmutz, <i>bryanti</i> , Bagn., and <i>crassiceps</i> , Karny). |
| Fore-coxæ simple in both sexes | Group 2 (containing <i>coxalis</i> , Bagn., and <i>flavipes</i> , Bagn.). |

EXPLANATION OF THE PLATES.

PLATE IV.

Figs. 1-2 *a.* *Tryphactothrips rutherfordi* (Bagn.), ♀, from Ceylon.

- 1. Head and pronotum. × 120.
- 2. Right fore-wing. × 60.
- 2 *a.* Spine on fore-wing. × c. 200.

Fig. 2 *b.* *Tryphactothrips brevisetis*, sp. n., ♀, from Mahé.

- 2 *b.* Spine on fore-wing. × 200.

Figs. 3-5. *Brachyurothrips anomalus*, gen. et sp. n., ♀, from Mahé.

- 3. Head, pronotum, part of pteronotum, and left fore-wing. × 60.
- 4. End of abdomen. × 60.
- 5. Right fore-wing. × 40.

Fig. 6. *Adiaphorothrips brevis*, sp. n., ♂, from Mahé.

- 6. Head, right antenna, pronotum, and right leg. × 45.

NOTE.—Figure 6 is made from a dried carded specimen before it was transferred to a microscope-slide.

PLATE V.

- Figs.* 1-2. *Acallurothrips macrurus*, gen. et sp. n., ♀ (?), from Mahé.
 1. Head and pronotum. × 60.
 2. End of abdomen. × 60.
- Figs.* 3-4. *Acallurothrips proturus*, sp. n., ♀ (?), from Silhouette.
 3. Head and pronotum. × 60.
 4. End of abdomen. × 60.
- Figs.* 5-6. *Cœurothrips brevicollis*, gen. et sp. n., ♂, from Mahé.
 5. Head and pronotum. × 60.
 6. End of abdomen. × 60.
- Figs.* 7-9. *Liothrips nigricornis*, sp. n., ♂, from Silhouette.
 7. Head and pronotum. × 30.
 8. End of abdomen. × 30.
 9. Joints 3-8 of right antenna. × 60.

NOTE.—All figures made from dried carded specimens before transference to microscope-slides.

PLATE VI.

- Figs.* 1-3. *Liothrips micrurus*, Bagn., ♀, from Egypt.
 1. Head, pronotum, and right fore-leg. × 60.
 2. End of abdomen. × 60.
 3. Right antenna. × 60.
- Figs.* 4-5. *Cœurothrips validus*, sp. n., ♀, from Silhouette.
 4. Head and pronotum. × 60.
 5. End of abdomen, but not showing the presumed surface-sculpturing and carinations of the tube. × 60.
- Fig.* 6. *Haplothrips karnyi*, Bagn., ♀, from East Africa.
 6. Head and pronotum. × 60.
- Figs.* 7-9. *Haplothrips longisetis*, Bagn., ♀, from Egypt.
 7. Head, pronotum, and left fore-leg. × 60.
 8. End of abdomen. × 60.
 9. Right antenna. × 60.
- Fig.* 10. *Haplothrips brevicollis*, Bagn., ♀, from East Africa.
 10. Head and pronotum. × 60.
- Fig.* 11. *Haplothrips silhouetterensis*, sp. n., ♀, from Silhouette.
 11. Head and pronotum. × 60.
- Figs.* 12-13. *Haplothrips mahensis*, sp. n., ♀, from Mahé.
 12. Head and pronotum. × 60.
 13. End of abdomen. × 60.

PLATE VII.

- Figs.* 1-4. *Cryptothrips seychellensis*, sp. n., ♀, and *C. difficilis*, sp. n., ♀, from Mahé and Silhouette respectively.
 1. *C. seychellensis*, head and pronotum. × 70.
 2. *C. difficilis*, right side of head and pronotum. × 70.
 3. *C. seychellensis*, right eye illustrating chaetotaxy. × 180.
 4. *C. difficilis*, right eye illustrating chaetotaxy. × 180.

- Figs. 5-6. *Dicaiothrips rex*, sp. n., ♂, from Silhouette.
 5. Head, pronotum, and right fore-leg. × 30.
 6. End of abdomen. × 30.
- Fig. 7. *Dicaiothrips stenocephalus*, Bagn., ♂, from East Africa.
 7. Head and pronotum. × 30.
- Fig. 8. *Dicaiothrips hystrix*, sp. n., ♂, from Silhouette.
 8. Head and pronotum. × 30.
- Fig. 9. *Dicaiothrips mahensis*, sp. n., ♂, from Mahé.
 9. Head, pronotum, and right fore-coxa. × 30.
- Figs. 10-11. *Gynaikothrips scotti*, sp. n., ♀, from Silhouette.
 10. Head and pronotum. × 70.
 11. End of abdomen. × 70.

XXXV.—On the Genus *Grammostola*, Simon. By MELLO-LEITÃO, M.D., Fellow of the Brazilian Society of Sciences.

THE genus *Grammostola*, created by E. Simon to his *Eurypelma pulchripes*, is essentially neotropical, extending itself from 20° to 30° south latitude; and almost all his species inhabit the southern Brazilian states (S. Paulo, Paraná, Santa Catharina, Rio Grande do Sul) and neighbouring countries.

In the collections of the Natural History Museums of S. Paulo and Rio de Janeiro I have seen almost all the known and some new species of this genus, and their study permits me to amend and complete Simon's and Pocock's diagnoses.

GRAMMOSTOLA, Simon, 1892 = CITHAROSCELUS, Pocock, 1903.

Cephalothorax as wide as long or a little longer, with thoracic fovea deep, right transverse or a little curved.

Eyes small; those of anterior file subequal and subequally spaced, in a more or less procurved file. Posterior median eyes generally much smaller than the anterior ones.

The *stridulating organ* consists of a thick cluster of slender bristles, forming a pad upon the distal third of the posterior side of the coxa of the palp, and a cluster of similar bristles above and below the suture, at the distal end of the coxa of the anterior leg. These bristles are more or less numerous.

Sternum flat, with marginal posterior sigillæ.

Legs 4, 1, 2, 3 or 4-1, 2, 3 or 1, 4, 2, 3. The scopula of the protarsus i. and ii. either covering less than half the lower